## Non Point Source Management Program :: Roads, Highways and Bridges



While roads, highways and bridges are a necessity of life these days, they contribute to nonpoint source pollution in several ways. According to the NC Department of Transportation (NCDOT), there are 99,607 miles of state, federal and local government maintained roads, streets and highways in North Carolina. The NC Division of Water Quality conservatively estimates that the total paved area of these road surfaces is 320,000 acres. This equates to approximately one percent of the surface area of the state or roughly the size of an average county in North Carolina. All of these roads are accompanied by drainage systems designed

to remove water quickly from the road surface.

The most visible impacts from roads and highways are construction-related. North Carolina?s population is rapidly growing, and highway widening and construction is a common sight. Clearing and grading land for highway construction opens up the soil to wind and rain erosion. Without adequate erosion control measures, literally tons of soil can be lost from an acre of exposed soil during a heavy rainstorm. To combat this, the NCDOT has made a concerted effort over the past several years to improve sediment control at construction sites.

Another, less obvious, water quality impact is the ongoing contribution of completed highways and associated drainage systems to nonpoint source pollution. Increased stormwater runoff from paved road surfaces can cause erosion in receiving streams. And the drainage systems provide an efficient means of delivering pollutants to nearby surface waters. Pollutants can include automobile and truck residues deposited on the roads such as exhaust emissions, oil, abraded tire material, and brake dust. Pollutants can also come from runoff from adjoining lands that flow onto roads or into drainage ditches such as fertilizers, pesticides, sediment and animal wastes.

Drainage systems that incorporate routing of stormwater through settling ponds, artificial wetlands, grass or natural vegetation prior to reaching surface waters help to reduce pollutant loading from road surfaces. By

contrast, curb and gutter systems, which are more common in urban areas, trap pollutants on the road surface and deliver them directly to surface waters with no filtration. In these areas, it is important for adjoining property owners such as homeowners and businesses, to minimize the transport of pollutants from their lands into streets such as fertilizer, lawn wastes, and water from roof downspouts. The delivery of highway runoff and pollutants from bridges directly to surface waters can be accomplished by collecting and piping bridge stormwater to nearby lands where the water can be treated in settling ponds or routed through vegetated buffers.



The North Carolina Department of Transportation's Project <u>Development and Environmental Analysis Branch</u> has the primary responsibility to prepare and develop environmental studies that adequately address environmental concerns and obtain the necessary permits for construction and maintaining the state?s highway system. The <u>Division of Water Quality</u> responsible for reviewing proposed transportation projects for water quality, wetland, and stream impacts which are circulated through the <u>NC Department of Administration's State Clearinghouse</u> for agency and public review which are listed on the <u>Environmental Bulletin</u>. The Division's <u>Wetlands Restoration Program</u> works to minimize watershed scale impacts from DOT projects in the state in part by assisting with mitigation plans and implementation. For citizens seeking participation in the early planning phases of future transportation projects (and to contribute to reduction of potential water quality impacts) contact your local <u>Metropolitan Planning Organization</u>.

## Roads, Highways and Bridges Links

## **Regulatory Agencies**

- North Carolina Department of Transportation?s Project Development and Environmental Analysis Branch

  NC Department of Administration?s State Clearinghouse
- Environmental Bulletin
- NC DWQ Wetlands Restoration Program
   Metropolitan Planning Organizations